

# MEN-4532

## Managed Layer 2+ Aggregation Gigabit Ethernet Switch

20-slot 100FX/Gigabit SFP + 4-port 100/1000 Combo +  
4-slot Gigabit SFP



### Description

To provide better and performable Ethernet service to the customers, service providers need to extend their reach and offer high valued services while reducing both cost and complexity. Offering the helping hand, Volktek is designed MEN-4532 Managed L2+ Aggregation switch designed to meet the most demanding performance requirements of ISPs, MSOs and enterprises class network. Deployed next to core, the switch is designed with impressive yet simple-to-use management features, comprehensive QoS mechanisms and robust security functions to deliver more controlled services on a highly secure network.

Designed with ultimate combination of 20-slot 100FX/Gigabit, 4-port 100/1000 Combo and 4-Gigabit SFP, the MEN-4532 offers gigabit solution with high-speed connectivity to support high bandwidth requirements of large-scale networks such as campus, metropolitan IP and enterprise networks. Supported by SFP DDMI and Battery backup option, the MEN-4532 reduces the complexity in monitoring SFP parameters and increases device availability, much needed solutions for today's networking environments. Delivers maximum performance, power and reliability particularly for high density subscriber base with high ARPU, MEN-4532 is considered as a cost-effective and secure switching solution for quick expansion and growth of your network, protecting your network investments.

### Features Highlight

#### Multicast Video Service Support

Deploying multicast applications such as IPTV has never been easier than before with comprehensive multicast traffic functions, IGMP snooping and MVR, in the MEN-4532. IGMP snooping regulates multicast traffic in a given VLAN and MVR operates with hosts on different VLANs in a Layer 2 network. These features on isolate the multicast streams and significantly reduce traffic from streaming media and other bandwidth-intensive IP multicast applications for better bandwidth. Thereby, the MEN-4532 supports applications that use multi-traffic in large scale across the network, saves network bandwidth, reduces operational burden and enhances the overall network performance.

#### Redundant Ring for Faster Network Recovery

Even few seconds of missed communications due to link failure can cause inconvenience and recovering it becomes very critical. Considering these threats, the MEN-4532 is designed with various ring protocols like STP, RSTP, MSTP, Xpress Ring and ERPS where the network failure is recovered in time scale of milliseconds. These features of the MEN-4532 provide a highly reliable network with redundancy connections whenever required and guarantee continuous network uptime.

#### Comprehensive Traffic Prioritization

Network applications need different levels of services delivered to them reliably without any transmission delays and interruptions. The MEN-4532 has comprehensive QoS mechanisms that assign priority to applications and send only specific dedicated traffic to them. In addition, bandwidth management functions of the switch allocate greater bandwidth for mission-critical communications. With increased control, administrators can prevent unpredictable errors and utilize the bandwidth more effectively.

#### Enhanced Control and Security

The MEN-4532 implements complete Layer 2 to Layer 4 ACLs to restrict access to your sensitive network resources by filtering specific packets based on TCP/UDP ports, source and destination IP addresses or particular network devices. Furthermore, DHCP snooping, TACACS+, ARP, IEEE 802.1X and Port Security provide additional tools to manage access and levels of use of network. These defence mechanisms of the MEN-4532 deliver robust network security and enables service providers to offer more stable services on a more secure network.

#### Efficient Network Monitoring and Proactive Capability

MEN-4532 is configured with both SNMP v1/v2c/v3 and RMON which give enhanced approaches for real-time traffic analysis, remote-monitoring and management of individual switches, this avoids high OPEX and increased efficiency and performance. The switch is assimilated with intelligent e-mail alarm system and SNMP Trap functionality to detect system abnormality along with faster troubleshooting. In addition to this, the device maintains a system log for the subsequent analysis of abnormal and unwanted flaws.

#### Unparalleled Network Performance

Excessive and unnecessary inbound unicast, multicast or broadcast traffic on physical interfaces can degrade your network performance and can even result in complete loss of network service. Storm control and traffic monitor features of the MEN-4532 enables ISPs to effectively monitor and limit incoming traffic to prevent disruption of LAN ports. In addition, loop detection on the switch identifies loops in the network and disables the relevant ports to avoid loop storms, preventing LAN degradation and achieving maximum network performance. These features along with auto-recovery timer deliver robotic methods to control your network automatically.

## Features Highlight

## Last-mile Investment Protection

It is critically important for ISPs to protect their last-mile infrastructure from device thefts to avoid delays in delivering network services and loss of your investment. Focusing on this on-field hassle, the MEN-4532 is designed with Device Lock feature, a feature that locks your device to your network and will not function in any network other than its configured network. This innovative feature reduces device thefts and provides a continuous network connectivity saving your infrastructure investments.

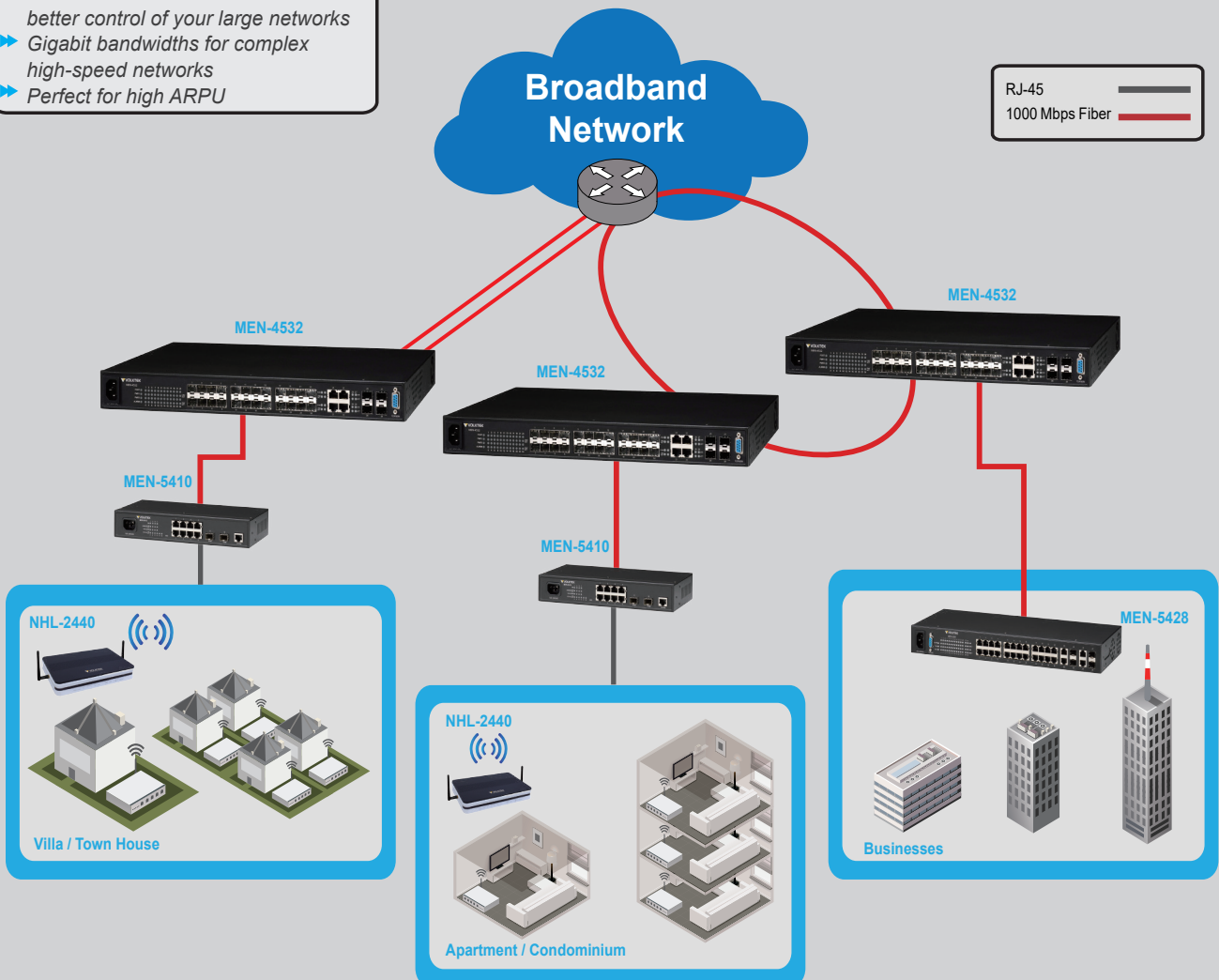
## Fine-grained Service Management

Beside basic port-based VLAN function, the MEN-4532 provides higher and flexible levels of VLAN configuration related to MAC and Protocol-based. While MAC-based comprises of defining a virtual network according to the MAC addresses of stations, the Protocol-based VLAN makes it possible to create a virtual network by protocol type. These features along with VLAN stacking enable ISPs to flexibly deliver services with extra security and separation. As a result, ISPs using the MEN-4532 can experience fine-grained service management fulfilling the requirements of their subscribers.

## Application

Experience superior performance and massive bandwidths that deliver remarkable quality services

- ▶ Advanced L2 features for much better control of your large networks
- ▶ Gigabit bandwidths for complex high-speed networks
- ▶ Perfect for high ARPU



## Aggregation Level

MEN-4532: 20-slot 100FX/Gigabit SFP,  
4-port 100/1000 Combo + 4-slot Gigabit SFP  
Managed L2+ Aggregation Switch

## Access Level

MEN-5428: 24-port 10/100/1000Base-T,  
4 Gigabit Combo port Managed Access Switch

## Access Level

MEN-5410: 8-port 10/100/1000Base-T,  
2-slot Gigabit SFP Managed Access Switch

## CPE

NHL-2440: 1-port 100/1000 WAN + 4 ports 10/100/1000 LAN  
802.11n Wireless Router

## Specifications

## Features

## Enhanced Function

Hardware Monitor
Code Redundancy
MSTP
Xpress Ring
Dual Homing
Protocol-based VLAN
MAC-based VLAN
GARP/GVRP
ERPS (G.8032v1/v2)
IPoE (DHCP option 82)
IGMP Statistics/Group Filter
IGMP Message Filter
MVR (Multicast VLAN Registration)
DHCP Relay

VLAN Translation
DHCP Option 66/67
Auto Provisioning

## Network Function

Loop detection with recover timer
Static/LACP Trunking
Spanning tree Protocol
Rapid Spanning Tree Protocol
IGMP Snooping v1/v2/v3
VLAN Stacking (Q in Q)
DHCP Snooping
Flow Control

## Maximum Distances

Copper	100 m
Console	15 m
SFP	Up to 110 Km

## Performance

Throughput	14,880 pps to 10 Mbps ports
	148,800 pps to 100 Mbps ports
	1,488,000 pps to 1000 Mbps ports
Switch Fabric	46Gbps
L2 Forwarding	41.7Mpps
MAC Table Size	16K
Packet buffer size	12Mbit
Jumbo Frame Size	10K

## Network Management

Local Console
CLI through Console and Telnet
Web-based GUI
SNMP v1/v2c/v3
Port-based Mirroring
System Log
SNMP Trap
Monitor alarm
Device Lock
DDMI support
Firmware upgrade
Configuration Backup/Restore
Management VLAN

## User Security

Static MAC Forwarding
ARP Inspection
ACL (L2/L3/L4)
DHCP Snooping

802.1x Port Authentication
MAC Anti-Spoofing
TACACS+

## Traffic Management and QoS

Rate Limitation
Tag Based/Port-Based VLAN
4K Active VLAN Support
802.1p Priority Queues per port
Traffic Classification
Network Storm Control
QoS Scheduler SP/WRR

## Standards

IEEE 802.3	10Base-T
IEEE 802.3u	100Base-TX/FX
IEEE 802.3ab	1000Base-T
IEEE 802.3z	1000Base-SX/LX
IEEE 802.3x	Flow Control
IEEE 802.3ad	Link Aggregation
IEEE 802.3	N-way Auto Negotiation
IEEE 802.1d	STP
IEEE 802.1w	RSTP
IEEE 802.1s	MSTP
IEEE 802.1p	CoS Prioritization
IEEE 802.1q	VLAN Tagging
IEEE 802.1x	Port Authentication
IEEE 802.1ab	LLDP
IEEE 802.1ad	VLAN-Stacking
IEEE 1588-2008	Precision Time Protocol (PTP)
ITU-T G.8032v1/v2	Ethernet Ring Protection Switching (ERPS)

## Power

Input Voltage	AC: 100~240V, 50~60Hz
	DC: 48V (MEN-4532D only)
Power Consumption	TBD

## Interface

Ports	20-slot 100FX/GbE SFP
	4-port 100/1000 Combo
	4-slot GbE SFP
	1 x RS-232 Console (DB-9, female)

## Mechanical and Environment

Operating Temperature	0°C~50°C
Storage Temperature	-20°C~70°C
Operating Humidity	10 to 80% RH (non-condensing)
Storage Humidity	5 to 90% RH (non-condensing)
Weight	TBD
Dimensions	440x44x285mm (WxHxD)

## Ordering Information

MEN-4532	Managed Layer 2+ Aggregation Gigabit Ethernet Switch, 20-slot 100FX/Gigabit SFP + 4-port 100/1000 Combo + 4-slot Gigabit SFP
MEN-4532D	Managed Layer 2+ Aggregation Gigabit Ethernet Switch, 20-slot 100FX/Gigabit SFP + 4-port 100/1000 Combo + 4-slot Gigabit SFP
FPM-107	100Base-FX Multi-mode SFP, 2Km
FPM-107-30	100Base-FX Single mode SFP, 30Km
GBM-132	100Base-FX Bi-di Single Mode SFP Module, 20Km
GBM-104	1000Base-SX 1.25G, Multi-mode SFP, 500m
GBM-104-2	1000Base-SX 1.25G, Multi-mode, 3.3V, 1310nm, 2Km
GBM-104-10	1000Base-LX 1.25G, Single mode SFP, 10Km
GBM-123	1000Base-LX Bi-di Single Mode SFP Module, 10Km

\*Specifications subject to change without notice.